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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,065	01/17/2006	Eddy Jean Edgard Freyne	JANS-0089	8098
45511 7590 07/11/2007 WOODCOCK WASHBURN LLP CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER MURRAY, JEFFREY H	
			ART UNIT 1624	PAPER NUMBER
			MAIL DATE 07/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/565,065

Applicant(s)

FREYNE ET AL.

Examiner

Jeffrey H. Murray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 1/17/2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-17, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/09/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This action is in response to a response to a restriction requirement filed on June 17, 2007. Applicants' election of Group I is acknowledged. The applicant has selected their election without traverse. There are twenty claims pending and fifteen under consideration. Claims 14-16, and 18-19 are withdrawn from consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. This is the first action on the merits. The application concerns a novel group of compounds, their use as a medicine, their use for the manufacture of a medicament for the treatment of diseases mediated through glycogen synthase kinase 3 (GSK3), in particular glycogen synthase kinase 3-alpha and 3-beta, processes for their preparation and pharmaceutical compositions comprising them. The restriction requirement is deemed proper and therefore made FINAL.

### ***Priority***

2. This application is a non-provisional application 10/564,844, filed January 17, 2006 and is a national stage entry of PCT/EP04/51457, filed July 12, 2004, which claims foreign priority to EP03/50314, filed July 16, 2003.

### ***Specification***

3. The abstract of the disclosure is objected to because it exceeds one hundred fifty (150) words, the maximum number it may contain. Correction is required. See MPEP § 608.01(b) and 37 CFR 1.72.

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4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any of the errors of which applicant may become aware of in the specification.

#### *Claim Objections*

5. Claims 1, 12 and 13 are objected to because of the following informalities:

The word "and" needs to be changed to "or" for placing the claim in the alternative format. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112, 1st*

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-14 and 18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a 3-phenyl, 3-substituted phenyl, and 3-cyclohexyltriazolopyrimidines, does not reasonably provide enablement for triazolopyrimidines that are not substituted by these three groups in the 3-position. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The test of enablement is whether one skilled in the art could make and use the claimed invention from the disclosures in the application coupled with information known in the art without undue experimentation. (United States v. Teletronics Inc., 8 USPQ2d 1217 (Fed. Cir.

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1988)). Whether undue experimentation is needed is not based on a single factor, but rather a conclusion reached by weighing many factors (See *Ex parte Forman* 230 USPQ 546 (Bd. Pat. App. & Inter. 1986) and *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988).

These factors include the following:

1) *Amount of guidance provided by Applicant.* The Applicant has demonstrated within the application how to make a number of 3-phenyl, 3-substituted phenyl, and 3-cyclohexyltriazolopyrimidines. Within the application, the general formula (I) is a triazolopyrimidine substituted at both the 3- and 5-position. The 5-position is restricted to an amino group directly attached to a phenyl ring, and therefore makes the 5-position a substituted aniline. The 3-position can be substituted with a variety of different radicals, including but not limited to a substituted or non-substituted phenyl ring, a substituted or non-substituted cycloalkyl ring, or a substituted or non-substituted heterocyclic ring. Of the over 130 compounds shown in the current application, the only substitutions seen at the 3-position were a phenyl, substituted phenyl, and a cyclohexyl group.

2) *Unpredictability in the art.* It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved", and physiological activity is generally considered to be an unpredictable factor. (USPQ 18, 24 (CCPA 1970). See *In re Fisher*, 427 F.2d 833, 839, 166. Triazolopyrimidines are currently available drugs for treating depression (antidepressants) such as trazodone; however, tricyclic or similar cyclic antidepressants have been shown to have side effects such as anticholinergic effects (dry mouth, blurred near vision, constipation, dysuria), antihistamine effects (weight gain, sedation),

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antiadrenergic effects (postural hypotension, vertigo, dizziness) and cardiotoxicosis or acute poisoning caused by excessive intake. (Nishibe, et. al. US 6,737,085).

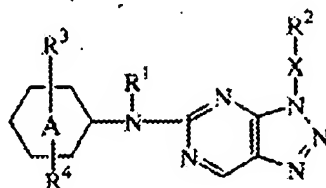
The applicants claim in Claim 1 a broad set of triazolopyrimidines with numerous side chains and residue groups. Within the specification, applicants describe in detail the experimental procedure for the preparation of the intermediate and final compounds. Some of the steps within the synthesis stand out as being unpredictable in the potential results that may be observed. For example, in the general synthesis of these triazolopyrimidine compounds, page 27 of the specification (V-a) demonstrates a chloride displacement of the pyrimidine ring by the aniline which will represent ring A, substituted on the 5-position of the triazolopyrimidine. Here the 3-position portion of the molecule has already been introduced and a reduction and cyclization step are remaining. The reactions following these steps involve a reduction of a nitro group to an amino group using platinum (Pt) or palladium (Pd) on carbon, followed by harsh cyclization conditions whereby the molecule is subjected to a 6 N HCl / glacial acetic acid conditions.

Applicants list that R<sub>2</sub> and R<sub>3</sub> may be substituted by a variety of residue groups such as alkenyl, alkynyl, hydroxyl, cyano, ethers, and other groups. While this may be true, a Pt/C hydrogenation will react to reduce alkenyl or alkynyl groups. (King, et. al. Pt/C; p. 1); (King et. al. Pd/C; p. 1-3). It may also react to reduce any heterocyclic rings that might be present as R<sub>2</sub> may be substituted in this fashion (King et. al., Pt/C; p. 4) or nitriles (King et. al. Pd/C; p. 3). Likewise, 6 N HCl can react with ethers (Mills, et. al., p. 3) or add to carbon-carbon multiple bonds (Mills, et. al., p.4) as well as react with alcohols (Mills, et. al., p.5). The side chains and

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residues mentioned above have been shown to contain a degree of uncertainty due to the reagents involved in synthesizing the final compounds.

3) *Scope of the claims.* The scope of the claims involve all of the millions of compounds of general formula (I) where A is phenyl:



Thus, the scope of claims is very broad.

4) *Nature of the invention.* The nature of this invention relates generally to a novel group of compounds, their use as a medicine, their use for the manufacture of a medicament for the treatment of diseases mediated through glycogen synthase kinase 3 (GSK3), in particular glycogen synthase kinase alpha and beta; processes for their preparation and pharmaceutical compositions comprising them.

5) *Level of skill in the art.* The artisan using Applicants invention would be a physician with a M.D. degree, and having several years of experience.

MPEP §2164.01 (a) states, "A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)." That conclusion is clearly justified here that Applicant is not enabled for making these compounds or compositions or treating the diseases mentioned.

***Claim Rejections - 35 USC § 112, 2nd***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1, 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 12 and 13 are only permitted to claim one invention. The language of Claims 1, 12 and 13 are written in such a way as to claim multiple inventions in one claim, which is not permitted. The claim are indefinite and need to be rewritten. Examiner suggests changing the word "and" to "or" in each of the three claims.

***Conclusion***

22. Claims 1-14 and 18 are rejected.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey H. Murray whose telephone number is 571-272-9023.

The examiner can normally be reached on M-F 7:30-5pm EST.

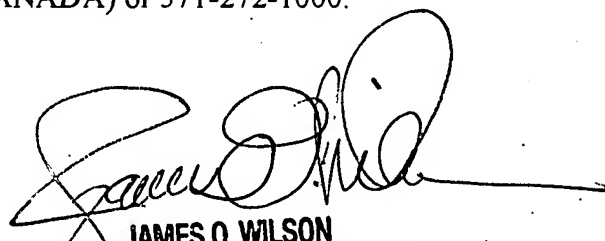
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisors, James Wilson can be reached at 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JHM



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